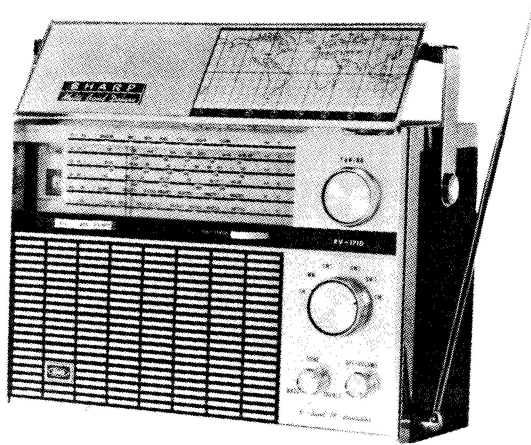


Service Manual



MODEL
FV-1710

SPECIFICATIONS

Circuit: 18-transistor, 10-diode, 4-rectifier,
1-thermistor superheterodyne system
with AGC & AFC

Frequency Range: LW 150~370 KHz
MW 530~1600 KHz
SW1 1.6~4.3 MHz
SW2 3.9~12.0 MHz
SW3 12.0~26.5 MHz
FM 86.5~108 MHz

Intermediate Frequency: AM 455 KHz
FM 10.7 MHz

Power Supply: DC 12 Volts (UM-1 battery x 8 pcs.)
or AC 110,220,240 Volts 50/60 cycles

Power Output: 1.2 watts (maximum)

Speaker: 6" x 4" Oval P.D.S.
4 ohms

Dimensions: 12"(W) x 4 3/4"(D) x 8 1/4"(H)

Weight: 11pounds without batteries

TRANSISTOR COMPLEMENT

Q1	2SA234 (B) or (C)	AM Oscillator
Q2	2SA234 (C)	AM RF Amplifier
Q3	2SA234 (C)	FM Mixer
Q4	2SA435 (B)	FM Amplifier
Q5	2SA235 (C)	FM Oscillator
Q6	2SA235 (A)	FM Mixer
Q7	2SA234 (B)	1st IF Amplifier
Q8	2SA234 (A)	2nd IF Amplifier
Q9	2SA234 (A)	3rd IF Amplifier
Q10	2SB75 (B)	Audio Amplifier
Q11	2SB75 (B)	Audio Driver
Q12	2SB77 (B)	Audio Output
Q13	2SB77 (B)	Audio Output
Q14	2SB77 (B)*	Audio Output
Q15	2SB77 (B)	Audio Output
Q16	2SA12 (A)	BFO
Q17	2SB370 (A) or (B)	Power regulator
Q18	2SB370 (A) or (B)	Power regulator

6630

HAYAKAWA ELECTRIC CO., LTD.

OSAKA, JAPAN

GENERAL DESCRIPTION

The circuitry used in this six band portable radio incorporates 18 transistors, 10 diodes, 4 rectifiers and 1 thermistor. A bar antenna feeds the LW or MW broadcast signal to the converter.

A telescopic antenna feeds the SW or FM broadcast signal to the mixer.

The AM Singal goes through 2 IF amplifiers and 1 diode detector.

The FM signal goes through 3 IF amplifiers and 2 diode detector. (matched pair).

The audio signal then passes through a 6 transistor audio amplifier circuit.

Local oscillator voltage is fed back to the mixer.

An AM AGC voltage is fed back to 1st IF amplifier.

CHASSIS REMOVAL

1. Slide the battery cover lock button to OPEN position and remove the battery cover.
2. Remove the 2 screws retaining the back cover and remove the back cover. Remove all the jacks (Car Ant., Ext. Ant., Phono, Tuner Output, Earphone) and the AC/DC power selector knob from the back cover.
3. Detach the dial cord string from the pointer.
4. Remove the AC power indicator light from its socket.
5. Pull off the 4 knobs on the front of the cabinet.
6. Take out the battery case.
7. Remove 7 chassis mounting screws (a). And the chassis can be removed. Exercise caution to avoid breaking the leads. If necessary, unsolder the leadwires attached to the chassis.

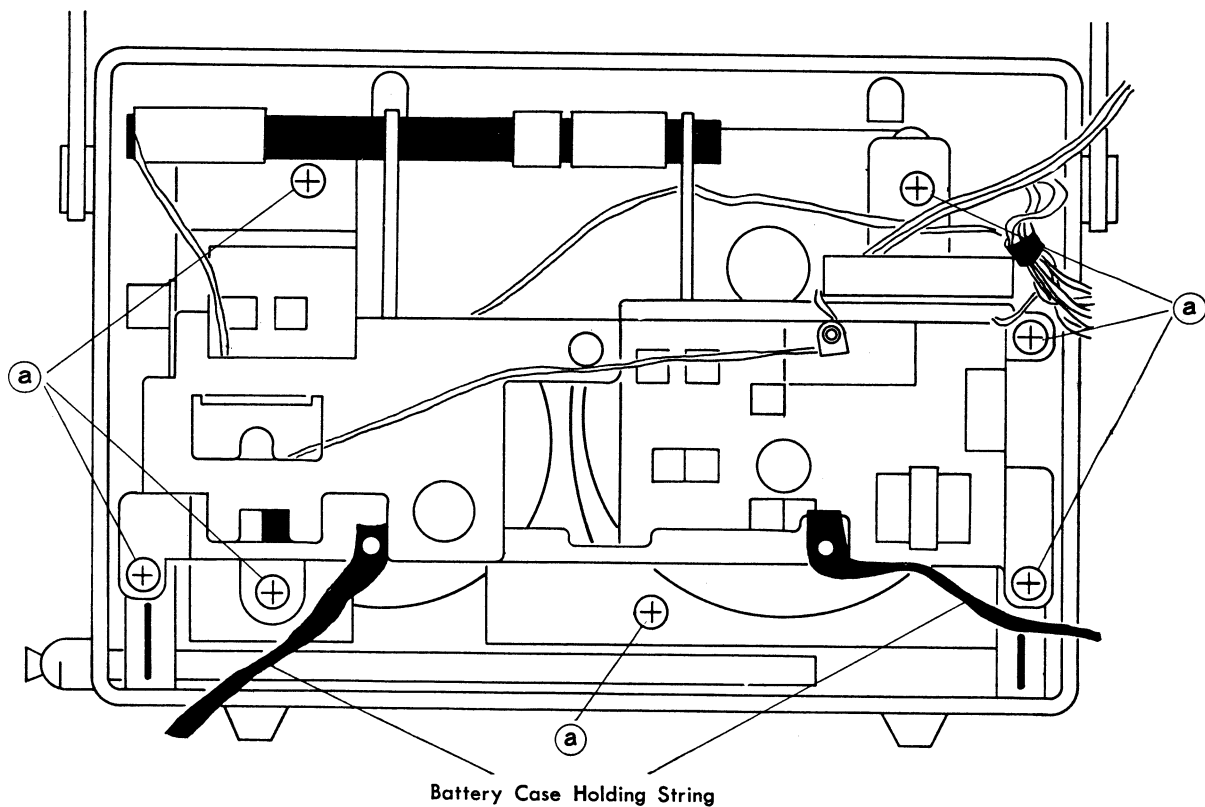


Figure 1

ALIGNMENT INSTRUCTION

Should it become necessary at any time to check the alignment of this receiver, proceed as follows:

- 1) Connect an output meter across the speaker voice coil lugs.
- 2) Set volume control for maximum.
- 3) Attenuate the signals from generator enough to swing the most sensitive range of the output meter.
- 4) Use a non-metallic alignment tool.
- 5) Repeat adjustments to insure good results.

ALIGNMENT CHART

AM Alignment

Signal generator				Receiver		Adjust
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks	
1	MW	Connect signal generator through a 10K Ω resistor to the antenna tuning condenser. Ground lead to the receiver chassis.	Exactly 455KC. (400%, 30%, AM modulated.)	Tuning gang fully open. (minimum capacity)	Adjust for maximum output on the output meter connected to the speaker voice coil lugs.	T-8, T-6 T-2 T-1
2	MW	Use radiating loop, loop of several turns of wire, or place generator lead close to receiver for adequate signal pickup. Connect generator output to one end of this wire.	Exactly 525KC. (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Same as step 1.	L7
3	MW	Same as step 2.	Exactly 1650KC. (400%, 30%, AM modulated.)	Tuning gang fully open. (minimum capacity)	Same as step 1.	C14
4	MW	Same as step 2.	Exactly 600KC. (400%, 30%, AM modulated.)	600KC	See NOTE A.	L1M
5	MW	Same as step 2.	Exactly 600KC. (400%, 30%, AM modulated.)	600KC	Same as step 1.	L14
6	MW	Same as step 2.	Exactly 1400KC. (400%, 30%, AM modulated.)	1400KC	Same as step 1.	C9
7	MW	Same as step 2.	Exactly 1400KC. (400%, 30%, AM modulated.)	1400KC	Same as step 1.	C19
8	MW	Repeat steps 2, 3, 4, 5, 6 and 7 until no further improvement is obtained.				
9	LW	Same as step 2.	Exactly 145KC. (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Same as step 1.	L6
10	LW	Same as step 2.	Exactly 380KC. (400%, 30%, AM modulated.)	Tuning gang fully open. (maximum capacity)	Same as step 1.	C13
11	LW	Same as step 2.	Exactly 180KC. (400%, 30%, AM modulated.)	180KC	Same as step 4.	L1L
12	LW	Same as step 2.	Exactly 180KC. (400%, 30%, AM modulated.)	180KC	Same as step 1.	L13

Signal generator				Receiver		Adjust
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks	
13	LW	Same as step 2.	Exactly 350KC. (400%, 30%, AM modulated.)	350KC	Same as step 1.	C18
14	LW	Same as step 2.	Exactly 350KC. (400%, 30%, AM modulated.)	350KC	Same as step 1.	C8
15	LW	Repeat steps 9, 10, 11, 12, 13 and 14 until no further improvement is obtained.				
16	SW 1	Connect signal generator through a 10K Ω resistor to the external antenna jack. Ground lead to the receiver chassis.	Exactly 1.58MC. (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Same as step 1.	L8
17	SW 1	Same as step 16.	Exactly 4.5MC. (400%, 30%, AM modulated.)	Tuning gang fully open. (minimum capacity)	Same as step 1.	C15
18	SW 1	Same as step 16.	Exactly 1.7MC. (400%, 30%, AM modulated.)	1.7MC	Same as step 1.	L2
19	SW 1	Same as step 16.	Exactly 1.7MC. (400%, 30%, AM modulated.)	1.7MC	Same as step 1.	L15
20	SW 1	Same as step 16.	Exactly 3.7MC. (400%, 30%, AM modulated.)	3.7MC	Same as step 1.	C10
21	SW 1	Same as step 16.	Exactly 3.7MC. (400%, 30%, AM modulated.)	3.7MC	Same as step 1.	C20
22	SW 1	Repeat steps 16, 17, 18, 19, 20 and 21 until no further improvement is obtained.				
23	SW 2	Same as step 16.	Exactly 3.8MC. (400%, 30%, AM modulated.)	Tuning gang fully open. (maximum capacity)	Same as step 1.	L9
24	SW 2	Same as step 16.	Exactly 12.2MC. (400%, 30%, AM modulated.)	Tuning gang fully open. (minimum capacity)	Same as step 1.	C16
25	SW 2	Same as step 16.	Exactly 4.5MC. (400%, 30%, AM modulated.)	4.5MC	Same as step 1.	L16
27	SW 2	Same as step 16.	Exactly 10MC. (400%, 30%, AM modulated.)	10MC	Same as step 1.	C11
28	SW 2	Same as step 16.	Exactly 10MC. (400%, 30% AM modulated.)	10MC	Same as step 1.	C21
29	SW 2	Repeat steps 23, 24, 25, 26, 27 and 28 until no further improvement is obtained.				
30	SW 3	Same as step 16.	Exactly 11.8MC. (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Same as step 1.	L10
31	SW 3	Same as step 16.	Exactly 11.8MC. (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Same as step 1.	C17
32	SW 3	Same as step 16.	Exactly 13MC. (400%, 30%, AM modulated.)	13MC	Same as step 1.	L4
33	SW 3	Same as step 16.	Exactly 13MC. (400%, 30%, AM modulated.)	13MC	Same as step 1.	L17

Signal generator				Receiver		Adjust
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks	
34	SW 3	Same as step 16.	Exactly 23MC. (400%, 30%, AM modulated.)	23MC	Same as step 1.	C12
35	SW 3	Same as step 16.	Exactly 23MC. (400%, 30%, AM modulated.)	23MC	Same as step 1.	C22
36	SW 3	Repeat steps 30, 31, 32, 33, 34 and 35 until no further improvement is obtained.				
37	MW	Same as step 2.	600KC (unmodulated)	600KC	Adjust for maximum beat.	L18

FM Alignment

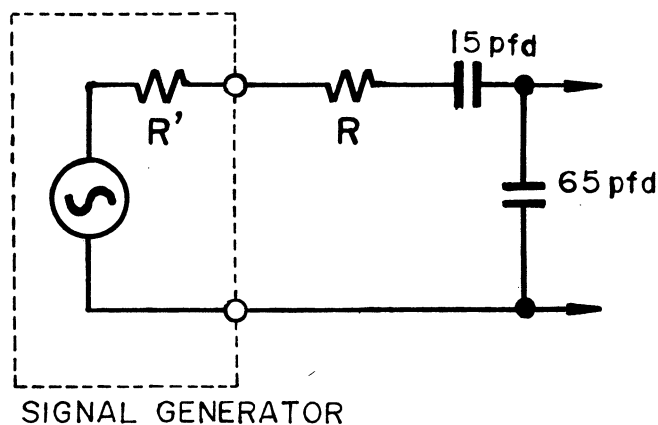
Signal generator				Receiver		Adjust
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks	
1	FM	Connect signal generator through a 5pF capacitor to FM mixer emitter, test point 1, of Q6. Ground lead to the receiver chassis.	Exactly 10.7MC. (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Connect a 0.04 mfd condenser between chassis ground and to Q9 collector, test point 5. Connect AC millivolt meter between TP8 and chassis ground.	T-7 T-5, T-3 T-4 For maximum indication.
2	FM	Same as step 1.	Exactly 10.7MC. (Unmodulated)	Same as step 1.	Remove 0.04 mfd. condenser, follow NOTE B.	T-9
3	FM	Connect signal generator through a 100Ω resistor, including output impedance of signal generator to the external antenna jack. Ground lead to the receiver chassis.	Exactly 86MC. (400%, 30%, FM modulated.)	Tuning gang fully closed. (maximum capacity)	Adjust for the maximum indication on the output meter connected across the voice coil lugs.	L11
4	FM	Same as step 3.	Exactly 110MC. (400%, 30%, FM modulated.)	Tuning gang fully open. (minimum capacity)	Same as step 3.	C24
5	FM	Same as step 3.	Exactly 88MC. (400%, 30%, FAM modulated.)	88MC	Same as step 3.	L5
6	FM	Same as step 3.	Exactly 88MC. (400%, 30%, FM modulated.)	88MC	Same as step 3.	L12
7	FM	Same as step 3.	Exactly 108MC. (400%, 30%, FM modulated.)	108MC	Same as step 3.	C23
8	FM	Same as step 3.	Exactly 108MC. (400%, 30%, FM modulated.)	108MC	Same as step 3.	C25
9	FM	Repeat steps 3, 4, 5, 6, 7 and 8 until no further improvement is obtained.				

CAR ANT. ADJUSTMENT (AM Alignment)

Signal generator				Receiver		Adjust
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks	
1	MW	The S6 should be switched over to Car Antenna and connect signal generator through the Car Antenna dummy (See NOTE C) to the Car Antenna jack.	Exactly 600KC. (400%, 30%, AM modulated.)	600KC	Adjust for maximum output on the output meter connected to the speaker voice coil lugs.	L28
2	MW	Same as step 1.	Exactly 1400KC. (400%, 30%, AM modulated.)	1400KC	Same as step 1.	C120
3	MW	Repeat steps 1 and 2 until no further improvement is obtained.				
4	LW	Same as step 1.	Exactly 180KC. (400%, 30%, AM modulated.)	180KC	Same as step 1.	L27
5	LW	Same as step 1.	Exactly 350KC. (400%, 30%, AM modulated.)	350KC	Same as step 1.	C118
6	LW	Repeat steps 4 and 5 until no further improvement is obtained.				

NOTE

- A. Check alignment of receiver antenna coil by bringing a piece of ferrite (such as a coil slug) near the antenna loop stick, then a piece of brass. If ferrite increases output, loop requires more inductance, change loop inductance by sliding the bobbin toward the center of ferrite core to increase, or way to decrease inductance.
- B. 1) Connect VTVM (0.1 volts range DC scale) between test point 10 and chassis ground. Set VTVM zero volt center.
 2) Adjust discriminator secondary. core (orange) for 0 volt on VTVM.
 3) Change signal generator frequency 10.7MC+100KC and -100KC approximately.
 4) Adjust discriminator primary Core (green) for balanced peaks. Peak separation should be approximately 200KC.
- C. Car ant. Dummy



CAR ANT. JACK

$$(R = 80 - R')$$

R' = out put impedance
of signal generator

CAR ANT. DUMMY

Figure 2

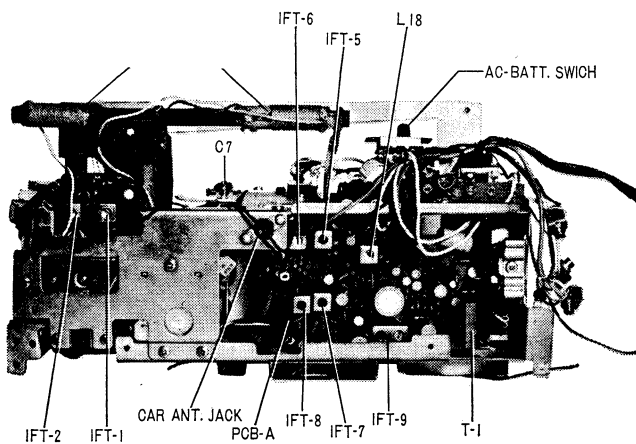


Photo 1 - Back View of Chassis

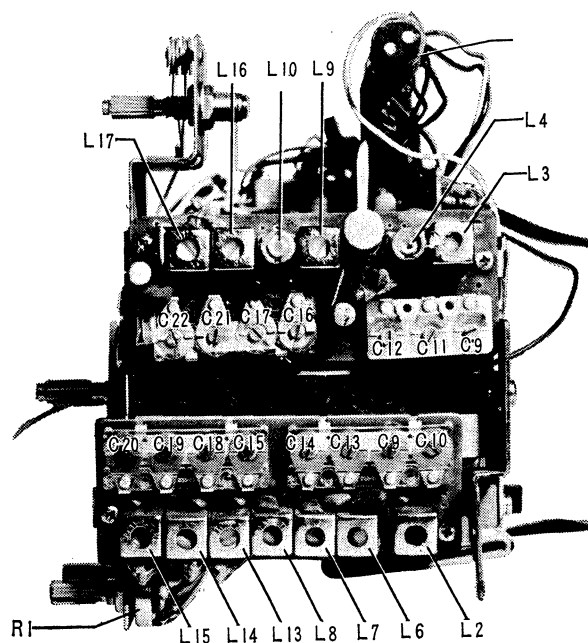


Photo 2 - Side View of Chassis

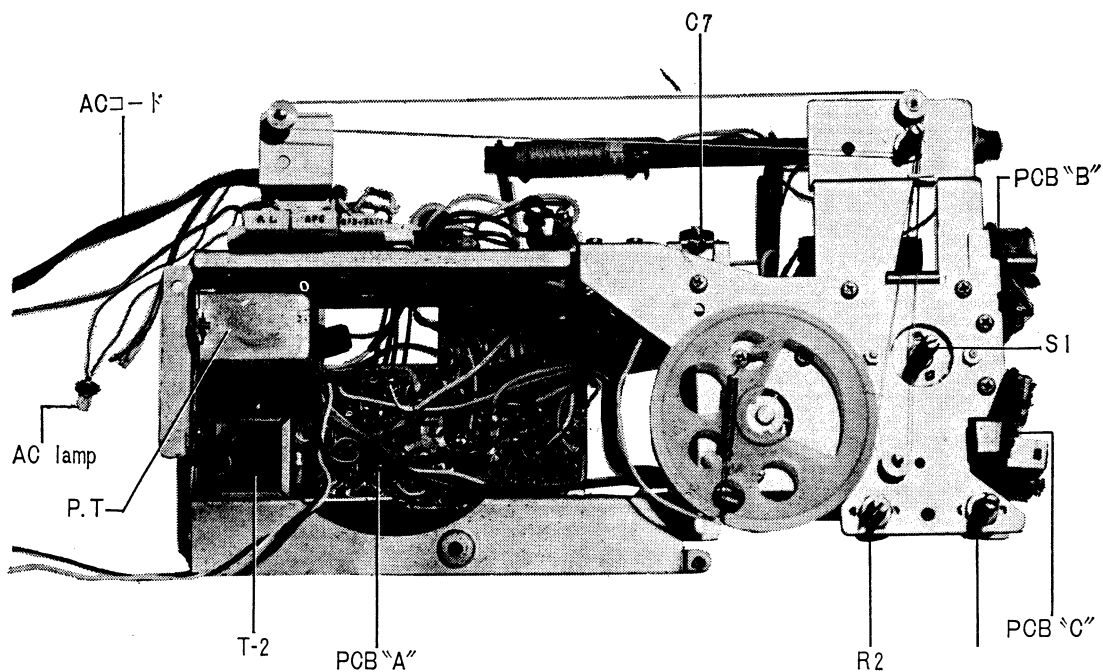


Photo 3 - Front View of Chassis

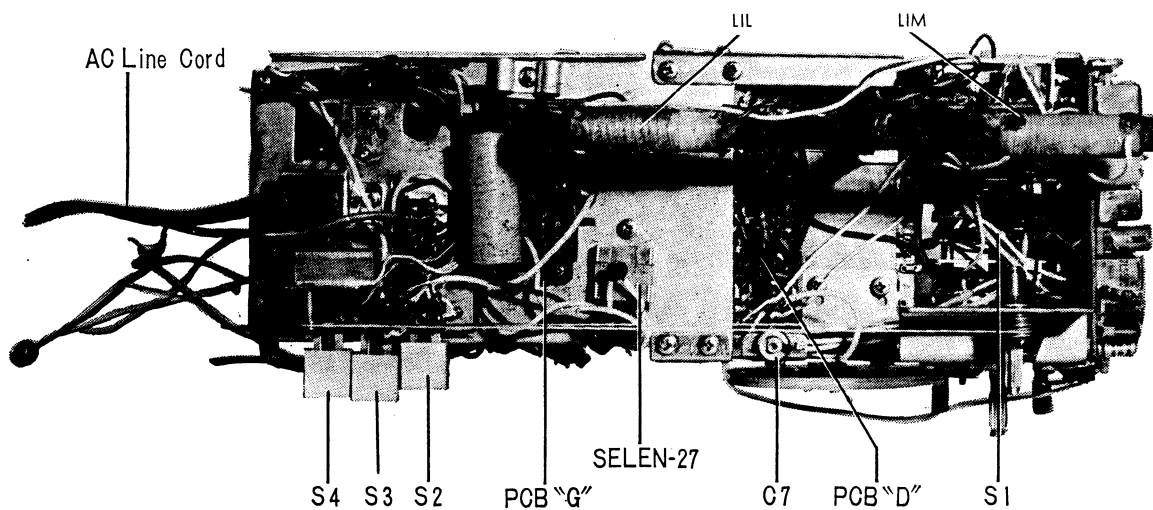


Photo 4 - Top View of Chassis

DIAL CORD STRINGING

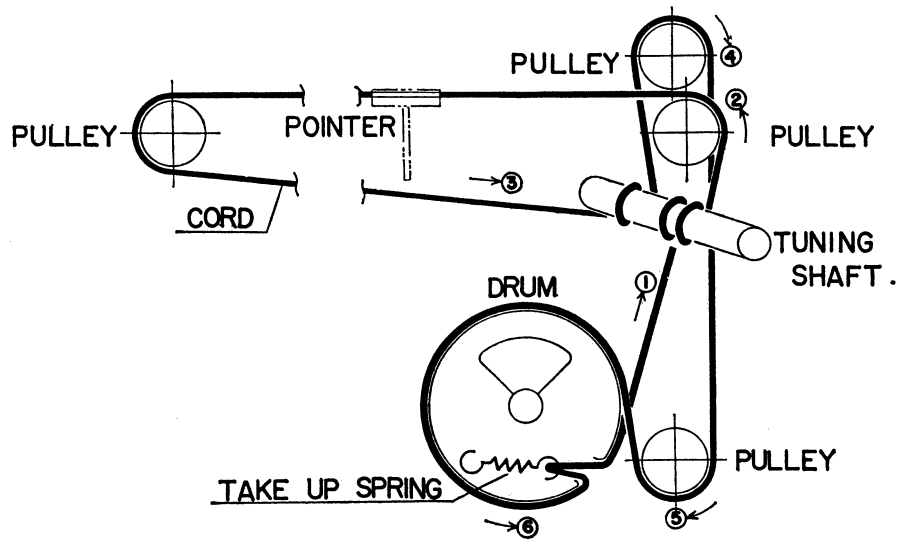


Figure 3

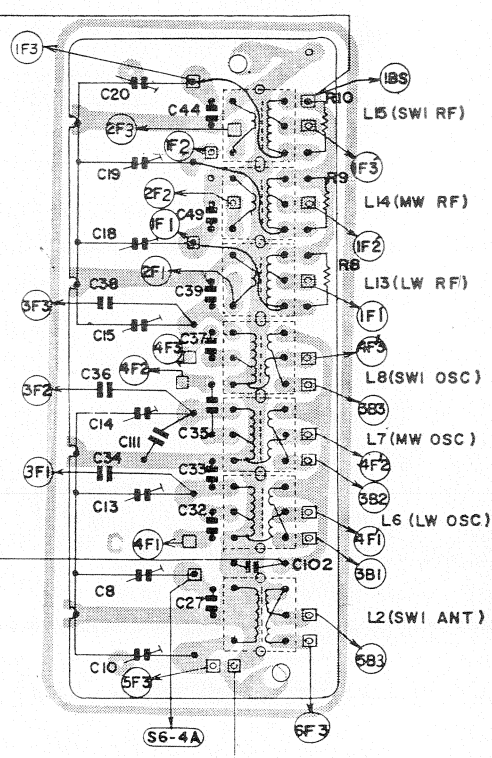
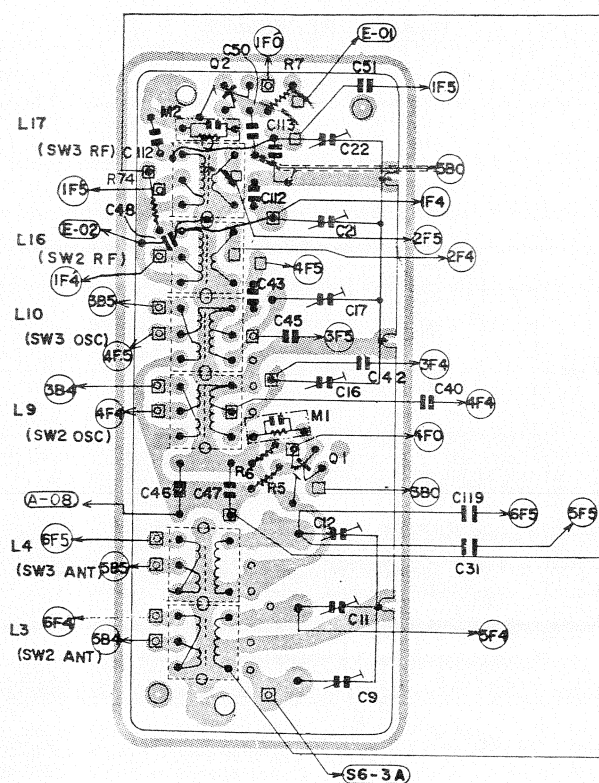
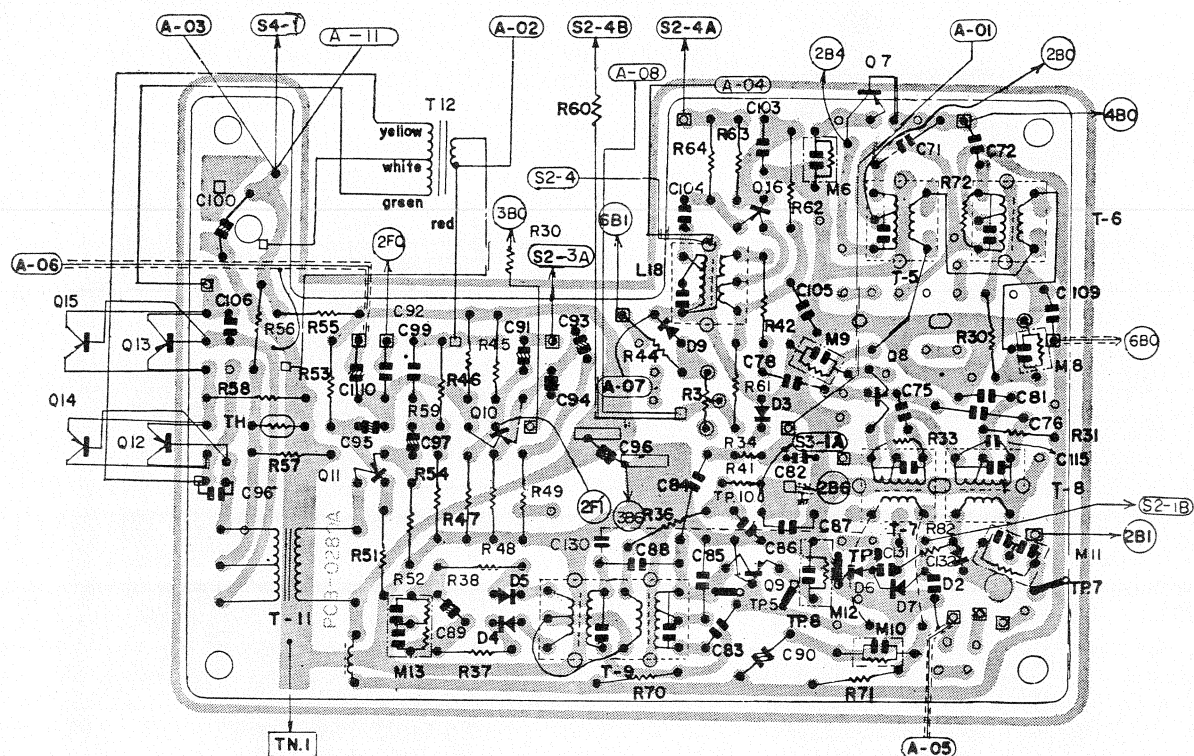
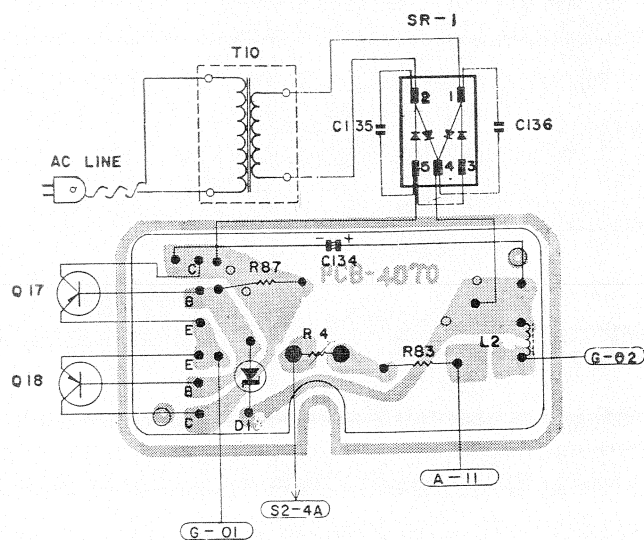
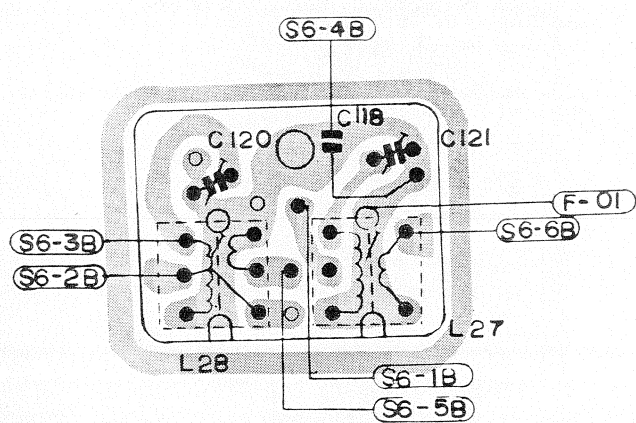
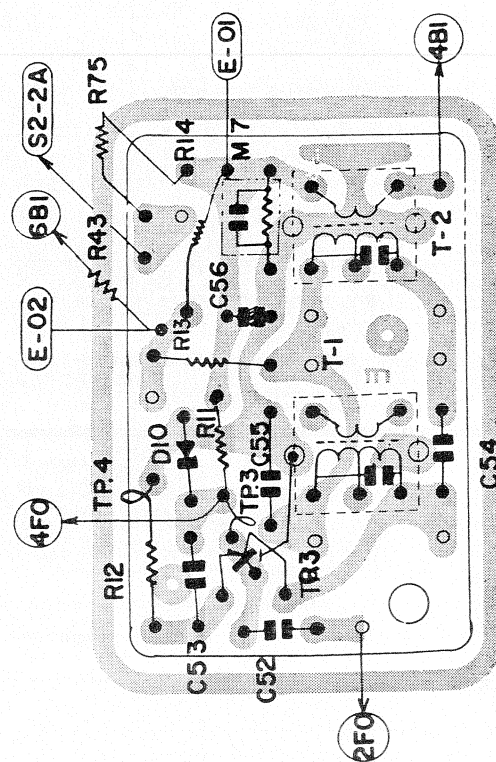
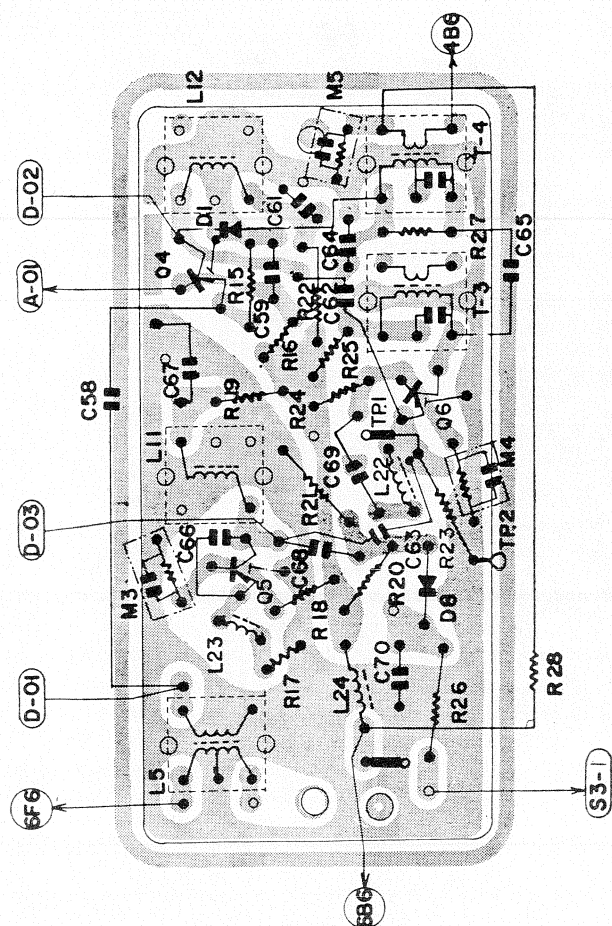
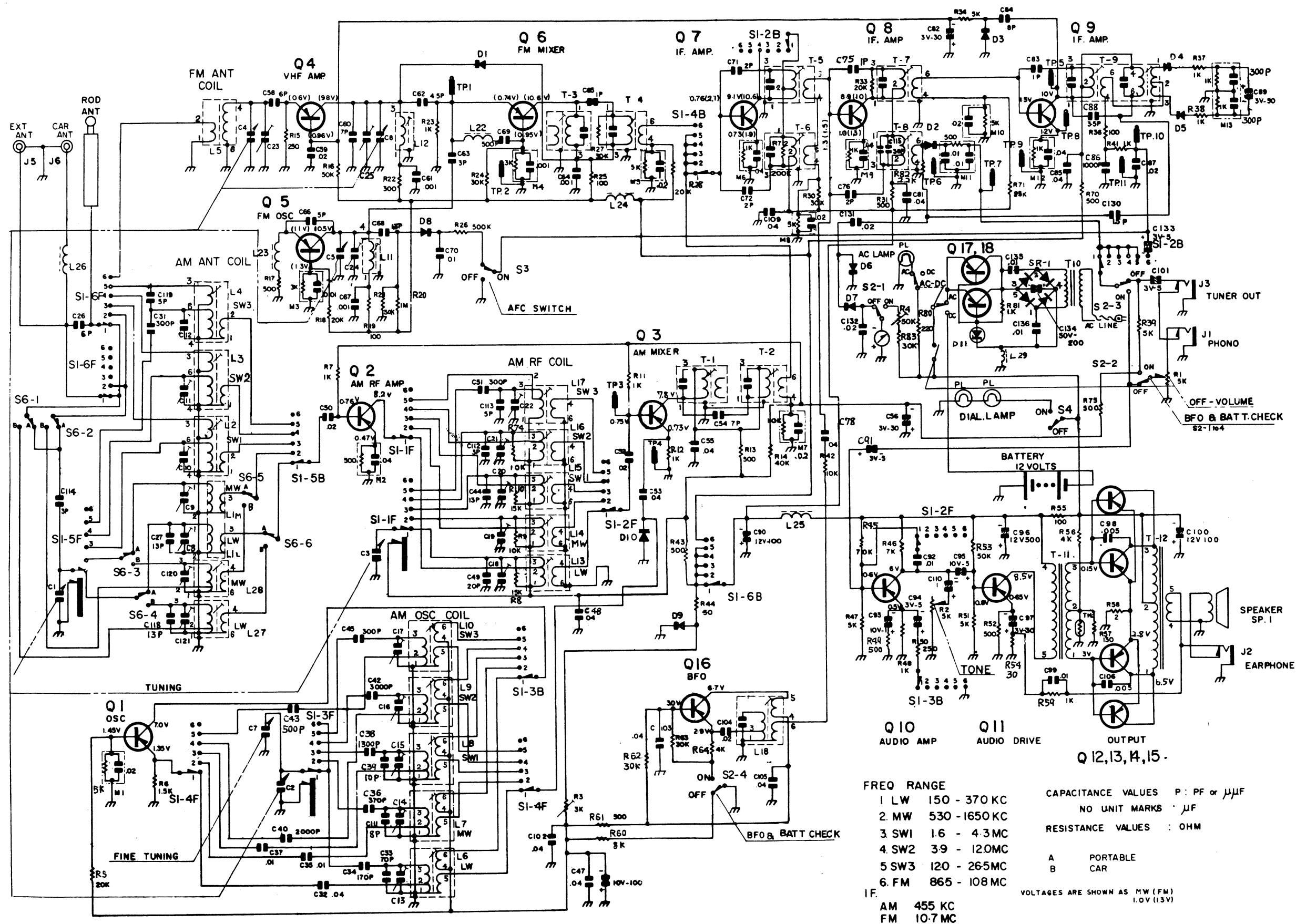


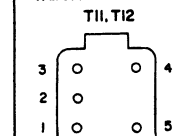
Figure 5





BOTTOM VIEWS

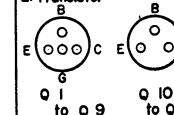
1. Transformer



T11 4-5 1-3
IMP 10K ohm 1.5K ohm
Rac 625 ohm 107 ohm

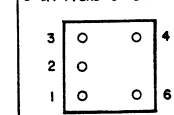
T12 1-3 4-5
IMP 350 ohm 4 ohm
Rac 22.5 ohm 0.75 ohm

2. Transistor



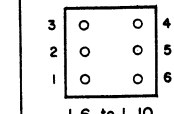
NOTE
E Emitter
C Collector
B Base
G Ground

3. IF Trans. 6 Coil.



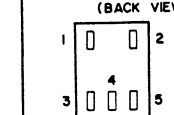
T1 to T9,
L2 to L5,
L11 to L17,
and L27 to L28.

4. Coil



L6 to L10,
and L18.

SR-1 (BACK VIEWS)



FREQ RANGE

- 1 LW 150 - 370 KC
- 2 MW 530 - 1650 KC
- 3 SW1 1.6 - 4.3 MC
- 4 SW2 3.9 - 12.0 MC
- 5 SW3 120 - 265 MC
- 6 FM 865 - 108 MC

IF
AM 455 KC
FM 10.7 MC

CAPACITANCE VALUES P: PF or μ F

NO UNIT MARKS μ F

RESISTANCE VALUES : OHM

A PORTABLE
B CAR

VOLTAGES ARE SHOWN AS MW (FM)
1.0V (13V)

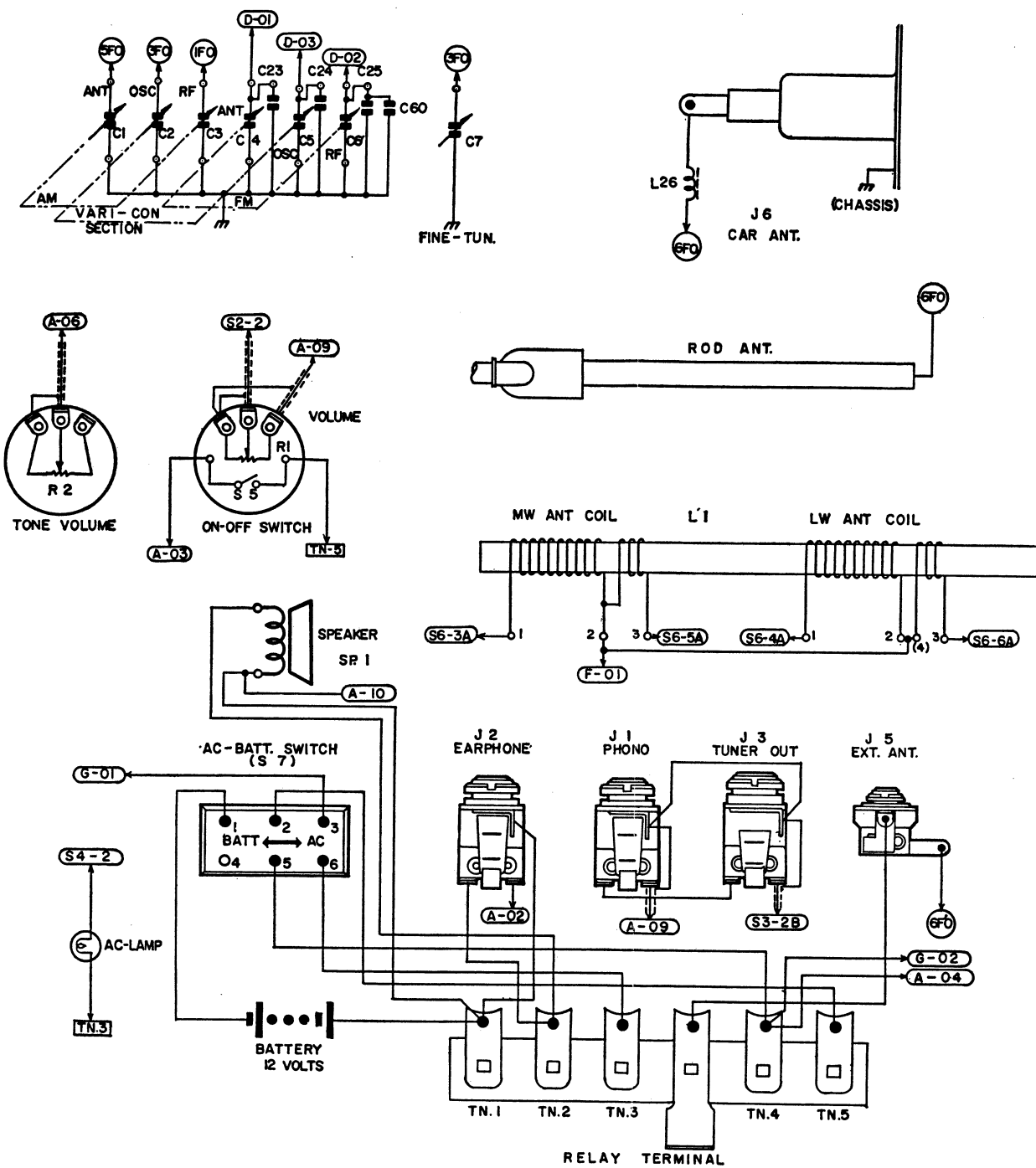


Figure 11 - Connecting Diagrams

SWITCH TERMINAL CONNECTIONS

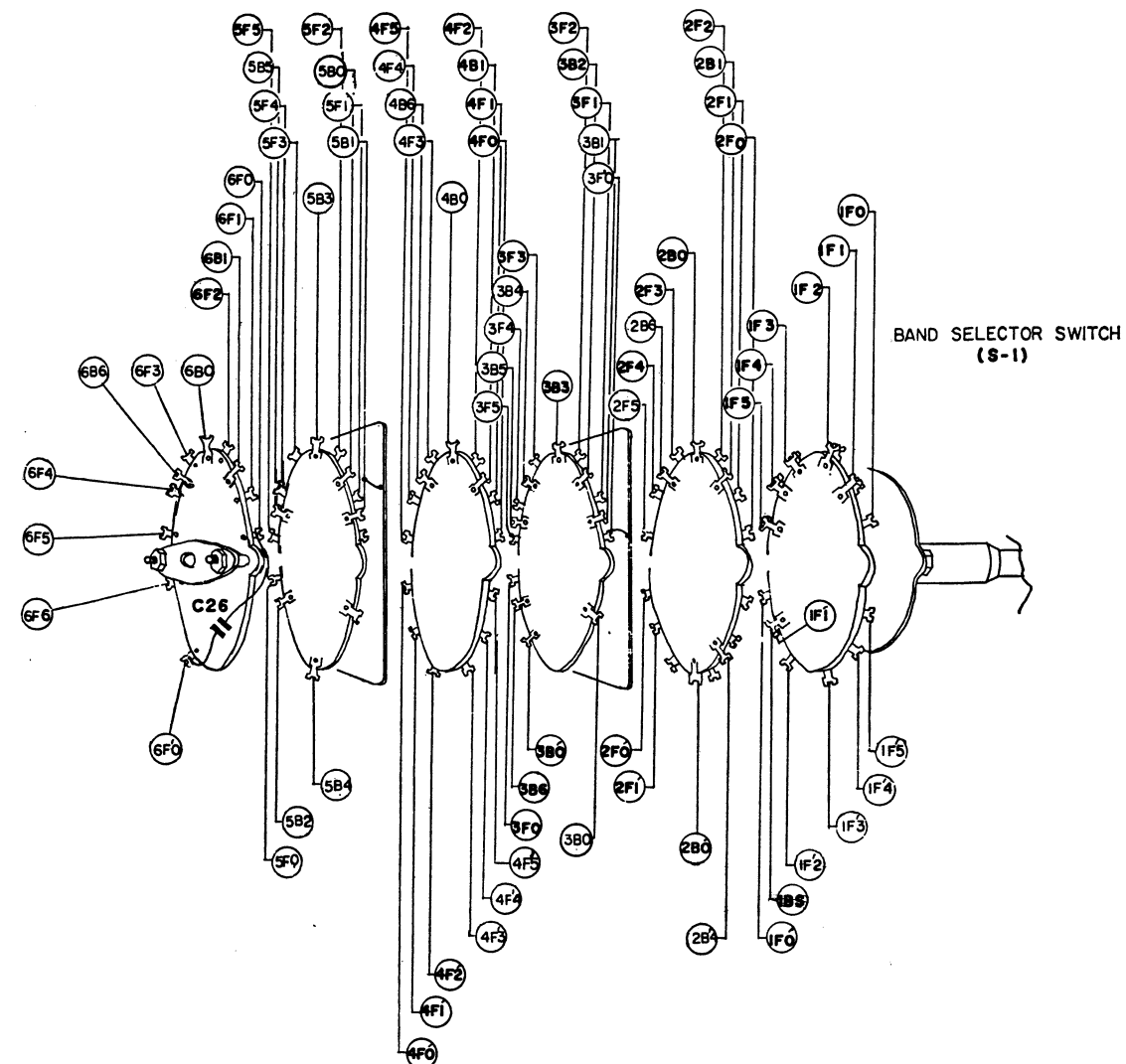


Figure 12 - Band Selector Switch

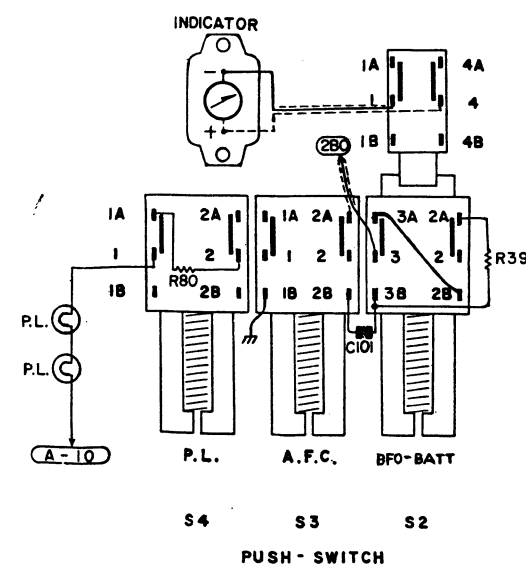


Figure 13

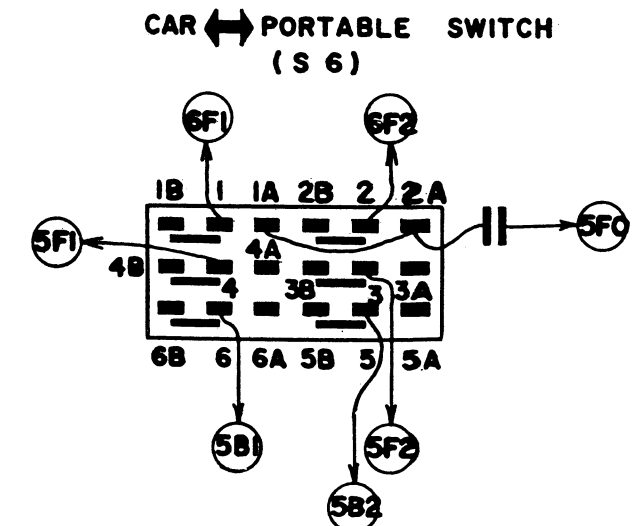


Figure 14 - Antenna Changing Switch

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
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CAPACITORS

C1, C2 C3, C4 C5, C6 C23, C24 C25 C7 C8, C10 C13, C14 C15, C18 C19, C20 C9, C11 C12 C26, C58 C27, C44 C68, C118 C31, C45 C51 C32, C53 C33 C34 C35, C37 C92, C99 C36 C38 C39, C113 C40 C42 C43, C69 C46 C47, C48 C55, C78 C81, C85 C102, C103 C105, C109 C49 C50, C52 C87, C104 C54, C60 C56, C82 C97 C61, C64 C67 C62 C63, C112 C114 C65, C75 C83 C66, C113 C119 C70, C135 C136, C137 C138	1560215500 1560290100 1560283400 1560283200 1552260927 1552213837 1554230717 1556240537 1554270817 1554217717 1556210537 1558237727 1558213627 1552210837 1558220627 1558230627 1558250727 1561210112 155191500 1552220817 1556220537 1552270927 1561230210 1559293900 1552245927 1552230917 1552210917 1552250927 1559292700	Variable, Tuning Gang with Trimmers (VC-155) Variable, Fine Tuning (VC-901) Trimmers (TO-834) Trimmers (TO-832) 6 pfd, 50V, $\pm .5$ pfd, Discap (D-5-609D) 13 pfd, 50V, ± 1 pfd, Discap (D-5-138F) 300 pfd, 50V, 5%, Discap (T-5-307J) .04 mfd, 50V, 20%, Mylar (ML-5-405M) 70 pfd, 50V, 5%, Discap (T-5-708) 170 pfd, 50V, 5%, Discap (T-5-177) .01 mfd, 50V, 20%, Mylar (ML-5-105M) 370 pfd, 50V, 10%, Styrol (S-5-377K) 1300 pfd, 50V, 10%, Styrol (S-5-136K) 10 pfd, 50V, ± 1 pfd, Discap (D-5-108F) 2000 pfd, 50V, 10%, Styrol (S-5-206K) 3000 pfd, 50V, 10%, Styrol (S-5-306K) 500 pfd, 50V, 10%, Styrol (S-5-507K) 100 mfd, 10V, Electrolytic (CU-1-101X) .04 mfd, 30V, $\pm 80\%$, Discap (K-3-405Z) 20 pfd, 50V, 5%, Discap (D-5-208J) .02 mfd, 50V, 20%, Mylar (ML-5-205M) 7 pfd, 50V, $\pm .5$ pfd, Discap (D-5-709D) 30 mfd, 3V, Electrolytic (CU-03-302X) .001 mfd, 50V, $\pm 100\%$, Discap (D-5-106P) 4.5 pfd, 50V, $\pm .25$ pfd, Discap (D-5-459C) 3 pfd, 50V, $\pm .25$ pfd, Discap (D-5-309C) 1 pfd, 50V, $\pm .25$ pfd, Discap (D-5-109C) 5 pfd, 50V, $\pm .5$ pfd, Discap (D-5-509D) .01 mfd, 30V, $\pm 80\%$, Discap (K-3-105Z)
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REF. NO.	PART NO.	DESCRIPTION
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C71, C72 C76 C84, C111 C86 C88 C89 C90, C100 C91, C94 C101, C133 C93 C95 C96 C98, C106 C110 C115 C120, C121 C130	1552220917 1552280937 1558210627 1552235917 1561250210 1559296600 1561250310 1561210312 1561250312 1559299900 1556250637 1559204400 1552230817 1560284200 1552215917	2 pfd, 50V, $\pm .25$ pfd, Discap (D-5-209C) 8 pfd, 50V, ± 1 pfd, Discap (D-5-809F) 1000 pfd, 50V, 10%, Styrol (S-5-106K) 3.5 pfd, 50V, $\pm .25$ pfd, Discap (D-5-359C) 50 mfd, 3V, Electrolytic (CU-03-502X) 100 mfd, 12V, Electrolytic (CU-03-503X) 5 mfd, 3V, Electrolytic (CU-03-503X) 1 mfd, 10V, Electrolytic (CU-1-103X) 5 mfd, 10V, Electrolytic (CU-1-503X) 500 mfd, 12V, Electrolytic (CU-1.2-501R) .005 mfd, 50V, 20%, Mylar (ML-5-506M) .1 mfd, Electrolytic (Special) 30 pfd, 50V, 5%, Discap (D-5-308J) Trimmers (TO-842) 1.5 pfd, 50V, $\pm .25$ pfd, Discap (D-5-159C)
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RESISTORS

R1 R2 R3 R4 R5, R28 R33 R6 R7, R11 R7, R11 R12, R23 R37, R38 R41, R48 R59 R8, R10 R9, R42 R76 R13, R17 R31, R43 R49, R52 R61, R70 R75 R14 R15, R50 R16, R53 R18, R21 R24, R27 R30, R62 R63, R83 R19, R25 R36, R55	1548274800 1548277600 1548275500 1548272300 1543220321 1543215221 1543210221 1543215321 1543210321 1543250121 1543240321 1543225121 1543250321 1543230321 1543210121	5K ohm, Pot., Volume Control with on-off switch (8V-748) 5K ohm, Pot., Tone (8V-776) 3K ohm, Pot., Oscillator Control (8V-755) 50K ohm, Pot., Battery Indicator Control (8V-723) 20K ohm, 1/4W, 10%, Carbon (1/4M-20KK) 1.5K ohm, 1/4W, 10%, Carbon (1/4M-1.5KK) 1K ohm, 1/4W, 10%, Carbon (1/4M-1KK) 15K ohm, 1/4W, 10%, Carbon (1/4M-15KK) 10K ohm, 1/4W, 10%, Carbon (1/4M-10KK) 500 ohm, 1/4W, 10%, Carbon (1/4M-500K) 40K ohm, 1/4W, 10%, Carbon (1/4M-40KK) 250 ohm, 1/4W, 10%, Carbon (1/4M-250K) 50K ohm, 1/4W, 10%, Carbon (1/4M-50KK) 30K ohm, 1/4W, 10%, Carbon (1/4M-30KK) 100 ohm, 1/4W, 10%, Carbon (1/4M-100K)
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PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
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R20 R22 R26 R34, R39 R47, R51 R44 R45 R46 R54 R56, R64 R57 R58 R60 R71 R72 R80 R81 R82	1543210521 1543230121 1543250421 1543250221 1543250021 1543270321 1543270221 1543230021 1543240211 1543213111 1543220821 1543280221 1543225321 1543220421 1543222122 1543210222 1543222221	1 Megohm, 1/4W, 10%, Carbon (1/4M-1MK) 300 ohm, 1/4W, 10%, Carbon (1/4M-300K) 500K ohm, 1/4W, 10%, Carbon (1/4M-500KK) 5K ohm, 1/4W, 10%, Carbon (1/4M-5KK) 50 ohm, 1/4W, 10%, Carbon (1/4M-50K) 70K ohm, 1/4W, 10%, Carbon (1/4M-70KK) 7K ohm, 1/4W, 10%, Carbon (1/4M-7KK) 30 ohm, 1/4W, 10%, Carbon (1/4M-30K) 4K ohm, 1/4W, 5%, Carbon (1/4M-4KJ) 130 ohm, 1/4W, 5%, Carbon (1/4M-130J) 2 ohm, 1/4W, 10%, Carbon (1/4M-2K) 8K ohm, 1/4W, 10%, Carbon (1/4M-8KK) 25K ohm, 1/4W, 10%, Carbon (1/4M-25KK) 200K ohm, 1/4W, 10%, Carbon (1/4M-200KK) 220 ohm, 1/2W, 10%, Carbon (1/2M-220K) 1K ohm, 1/2W, 10%, Carbon (1/2M-1KK) 2.2K ohm, 1/4W, 10%, Carbon (1/4M-2.2KK)
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RACKAGED CIRCUIT

M1, M5 M2 M3, M4 M6, M9 M12 M7 M8, M10 M11 M13	1559231500 1559230700 1559234400 1559230600 1559234300 1559231500 1559233500 1559233300	Capacitor (PRC-315) Capristor (PRC-307) Capristor (PRC-344) Capristor (PRC-306) Capristor (PRC-343) Capristor (PRC-315) Capristor (PRC-335) Capristor (PRC-333)
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REF. NO.	PART NO.	DESCRIPTION
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COILS & TRANSFORMERS

COILS & TRANSFORMERS

L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12 L13 L14 L15 L16 L17 L18 L21 L22, L23 L24 L25 L26 L27 L28 L29 T1, T2 T3, T4 T5 T6 T7 T8 T9 T10 T10 T10 T11 T12	1507229900 1507229600 1507229700 1507229800 1508210200 1507201400 1507201500 1507201600 1507201700 1507201800 1507201900 1507255500 1507254900 1507255000 1507255100 1507255200 1507255300 1507255400 1507294600 1507292500 1507291100 1507291800 1507292000 1507297500 1508210900 1508210900 1507273200 1507273500 1507274500 1507276500 1507274500 1507273400 1507273900 1515277500 1515277300 1515277700 1516280000 1517281200	Coil, LW & MW Antenna (7L-299A) Coil, SW1 Antenna (7L-196A) Coil, SW2 Antenna (7L-297A) Coil, SW3 Antenna (7L-298A) Coil, FM Antenna (8L-102A) Coil, LW Oscillator (7L-014B) Coil, MW Oscillator (7L-015B) Coil, SW1 Oscillator (7L-016B) Coil, SW2 Oscillator (7L-017B) Coil, SW3 Oscillator (7L-018B) Coil, FM Oscillator (7L-019B) Coil, FM RF (7L-555C) Coil, LW RF (7L-549C) Coil, MW RF (7L-550C) Coil, SW1 RF (7L-551C) Coil, SW2 RF (7L-553C) Coil, SW3 RF (7L-553C) Coil, BFO (7L-554C) Coil, Loading (7L-946) Coil, Emitter Choke (7L-925) Coil, Filter (7L-911) Coil, Filter (7L-918) Coil, Filter (7L-920) Coil, Battery Choke (7L-975) Coil, MW Car Antenna (8L-109A) Coil, MW Car Antenna (8L-109A) Transformer, 1st AMIF (7IF-732) Transformer, 1st FM IF (7IF-735) Transformer, 2nd FM IF (7IF-745) Transformer, 2nd AM IF (7IF-765) Transformer, 3rd FM IF (7IF-745) Transformer, 3rd AM IF (7IF-734) Transformer, FM Discriminator (7IF-739) Transformer, Power (110V Only) (5T-775) Transformer, Power (220V Only) (5T-773) Transformer, Power (240V Only) (5T-777) Transformer, Audio Driver (6T-800) Transformer, Output (7T-812)
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SEMI-CONDUCTOR

SEMECONDUCTORS

Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12, Q13 Q14, Q15 Q16 Q17, Q18 D1	1522214821 1522214831 1522214831 1522219521 1522214435 1522214411 1522214821 1522214811 1522214811 1522211221 1522211221 1522211328 1522210111 1522218111 1522270101	Transistor, AM Oscillator (2SA234 B or C) Transistor, AM RF Amplifier (2SA234C) Transistor, AM Mixer (2SA234C) Transistor, FM Amplifier (2SA435B) Transistor, FM Oscillator (2SA235C) Transistor, FM Mixer (2SA234A) Transistor, 1st IF Amplifier (2SA234B) Transistor, 2nd IF Amplifier (2SA234A) Transistor, 3rd IF Amplifier (2SA234A) Transistor, Audio Amplifier (2SB75B) Transistor, Audio Driver (2SB75B) Transistor, Output (2SB77B) Transistor, BFO (2SA12A) Transistor, Power regulator (2SB370 A or B) Diode, Stabilizer (IN34A)
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PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
D2	1522270101	Diode, AM Detector (IN34A)
D3	1522270101	Diode, FM AGC (IN34A)
D4, D5	1522270101	Diode, FM Detector (IN34A)
D6, D7	1522270101	Diode, Detector, Tuning Eye (IN34A)
D8	1522275501	Diode, FM AFC (IS85)
D9	1522273901	Diode, Stabilizer (TR-9GS)
D10	1522270101	Diode, Stabilizer (IN34A)
D11	1527270600	Diode, Power regulator (IS337)
SR1	1523202700	Diode, Rectifier (SELEN-27)
TH	1522280902	Thermistor, AOC(D-IE)

MISCELLANEOUS

MISCELLANEOUS

REF. NO.	PART NO.	DESCRIPTION
	1353274300	Drum (DP-743)
	11934820	Battery Cover (B-Buta4070)
J1, J2	1530211800	Jack, Phono & Earphone (J-118)
J3	1530230200	Jack, Tuner Out (J-302)
J5, J6	1530211400	Jack, Ext. Amt. & Car Ant. (J-114)
SP1	1570245100	Speaker (1510P-85A)
	1590241900	Earphone (MR-19)
	1571208700	Antenna, Telescoping Rod (Red-Ant-87)
	1590253100	Pilot Lamp (PL-531)
	1593250100	AC Lamp (3PL-501)
S1	1531226100	Switch, Band Selector (2S-61)
S2, S3		
S4	1531264300	Switch, BFO, AFC & PL (6S-43)
S5	1531264100	Switch, Battery Test (6S-41)
S6	1531246901	Switch, Car-Portable Selector (4S-69)
S7	1531240402	Switch, AC-DC Selector (4S-4)

11032241	Cabinet, Front (3Cab-029A)
11034297	Cabinet, Back (3Cab-4070B)
11092244	Knob, Tuning (9K-244)
11092245	Knob, Band Selector (9K-245)
11092246	Knob, Volume & Tone (9K-246)
11092247	Push Button, AFC (9K-247)
11092248	Push Button, BFO & Battery Test (9K-248)
11092249	Push Button, Pilot Lamp (9K-249)
11092117	Knob, Fine Tuning (9K-117V)
11092188	Slide Button, Back Cover Retaining (9K-188)
11202789	Pointer, Dial (Sisin-029)
11212963	Dial (Dial-4070)
11222032	Indication Plate, SHARP (Ind-P-029A)
11242843	Indication Plate, Tuning Knob (Ind-P4070A)
11222034	Indication Plate, Map (Ind-P-029C)
11242844	Indication Plate, Band Selector (IND-P4070B)
11232820	Dial Plate (Dial-P4070)
11332249	Decoration Metal, Front (Dec-M-029A)
11332250	Decoration Metal, Dial (Dec-M-029B)
1133225158	Decoration Metal, Right (Dec-M-029C)
1133225228	Decorat ion Metal, Left (Dec-M-029D)
11342774	Indication Badge (Ind-B-029)
11622701	Decoration Cover, Pilot Lamp
11932389	Handle (Totte-029)
1303222200	Printed Circuit Board, A (PCB-029A)
1303222300	Printed Circuit Board, B (PCB-029B)
1303222400	Printed Circuit Board, C (PCB-029C)
1303222500	Printed Circuit Board, D (PCB-029D)
1303222600	Printed Circuit Board, E (PCB-029E)
1303222900	Printed Circuit Board, F (PCB-029F)
1303228000	Printed Circuit Board, G (PCB-4070)
1310202900	Battery Case (B-Case-29)
1320293000	Socket, Car Antenna (SO-930)
1320221500	Socket, Pilot Lamp (SO-930)
1320221500	Socket, Pilot Lamp (SO-215)
1351279551	Pulley (P-795)
1351279651	Pulley (P-796)
1351279751	Pulley (P-797)
1352276451	Drive Shaft, Tuning (DS-764)